

REMARKS

Claims 1-20 remain pending in the application. Claims 8-11 and 17-20 are allowed. Claims 1-3, 12-14 and 16 are rejected. Claims 4-7 and 15 are objected to as being dependent upon a rejected base claim. Claims 5-7 are dependent to claim 4, therefore, are objected under the same rationale.

Pending Patent Applications

Applicants respectfully note that some portions of the disclosure of the present application are related to some portions of the disclosure of U.S. Patent Application Serial No. 09/999,881 filed on October 31, 2001, and U.S. Patent Application Serial No. 10/044,667, filed on January 11, 2002. However, they are not related in the sense of lineage or claiming, but only that they may be related in some overlapping portions of the disclosure. Further, a Terminal Disclaimer was filed in the course of prosecution of U.S. Patent Application Serial No. 10/044,667 with respect to U.S. Patent Application Serial No. 09/999,881. However, the filing of the Terminal Disclaimer was not an admission that the claims were related, but was filed to move prosecution forward. *Quad Environmental Technologies Corp. vs. Union Sanitary District*, 946 F.2d 870, 20 USPQ2d 1392 (Fed Cir. 1991). See, e.g., MPEP §804.03.

Claim Rejections – 35 U.S.C. §103

Claims 1-3, 12-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,926,476 (*Covey*) and further in view of U.S. Patent No. 4,173,783 (*Couleur*). Applicants respectfully traverse this rejection.

In the Final Office Action dated June 11, 2008, the Examiner again, focuses on the argument relating to whether *Covey* discloses or make obvious the establishment of a security level to a software object. The Examiner, in the Final Office Action, asserts that *Covey* is

directed to observing security behavior of untrusted software under test conditions and a trusted computing base (TCB) enforces security policy by enforcing constraints on accesses by certain entities. There are several flaws in the Examiner's reasoning. Firstly, the Examiner asserts that objects may be simply files, I/O devices, memory pages segments, etc.; however, the claims call for software objects with various non-limiting examples provided in the Specification.

Further, in the Final Office Action, the Examiner seems to support Applicant's arguments that the TCB imposes certain constraints that refer to the data and not the software objects themselves. As described in further detail below, *Covey* is directed to providing mechanisms to constrain untrusted software to read data from only certain sensitive levels and to write data at only certain sensitive levels. The sensitivity levels only relates directly to data and not to software objects. Therefore, regardless of the Examiner's assertion that *Covey*'s invention is to observe security behavior of untrusted software, it is abundantly clear that *Covey* does not disclose establishing a security level for a software object, but instead refers to sensitivity levels with respect to data.

Further, *Covey* provides indications that it is not referring to establishing security levels for software objects because it explicitly specifies that software need not be examined before it is permitted to handle multi-level security data. In other words, *Covey* is explicit in differentiating sensitivity levels being established with respect to data versus the actual software. Therefore, *Covey* simply fails to teach or make obvious the element of establishing the security level relating to a software object and *Couleur* does not make up for this deficit. Further, the Examiner argues in the Final Office Action that the RAM 60 in order to enforce different security policies at different times anticipates establishing a security level. In the Final Office Action, the Examiner deduces that the enforcement process performed by the RAM 60 equates to

establishing security levels for a software object. However, the Examiner provides no evidence to support this assertion. As described herein, *Covey* simply does not disclose establishing a security policy relating to a software object, as described in further details below.

Moreover, in the Final Office Action, with regard to the argument that those skilled in the art would not combine *Covey* and *Couleur* in the manner provided in the claims, the Examiner responds by asserting that *Covey* and *Couleur* do not need to disclose anything over and above the invention as claimed to render it unpatentable or anticipated. However this assertion does not advance the Examiner's position in combining *Covey* and *Couleur*. The Examiner simply states that *Covey* teaches memory access, which is page memory, but *Covey* is silent on the capability of showing multi-table I/O space access. *Couleur*, on the other hand, teaches multi-table I/O space in the abstract, Figure 1. However, as described further below, the combination of *Covey* and *Couleur* simply would not make obvious all of the elements of the claims of the present invention. Further, there is no evidence that those skilled in the art would find motivation to combine them in the manner claimed. *Covey* is directed to memory access, an more particularly, page memory. In contrast, *Covey* is directed to execution of untrusted software. There is no evidence to show, without employing improper hindsight reasoning, those skilled in the art would combine these two prior art references in the manner claimed in the present application.

As noted above, the combination of *Covey* and *Couleur* do not teach, disclose or make obvious all of the elements of claims of the present invention. For example, the Examiner asserts that *Covey* discloses or makes obvious the claim element of establishing a security level for a software object that is executed (see for example claim 1). The Examiner cites to section of *Covey* that discuss "sensitivity levels" to argue obviousness of the security level of the software

object of claims of the present invention. However, the Examiner has misapplied the “sensitivity levels” disclosure of *Covey*. *Covey* discloses that it contains mechanisms to “constrain untrusted software to read data from only certain sensitivity levels and to write data at only certain other sensitivity levels” (emphasis added). *See* col. 3, lines 3-5; Abstract. The sensitivity level of *Covey* is related to the data and not to the software object. In contrast, claim 1 calls for “establishing a security level for said software object.” Examiner analysis is clearly a misapplication of the prior art. *Covey* is explicitly clear that the sensitivity levels relates directly to only data and not to software objects. In fact, *Covey* explicitly asserts that software need not be examined before it is permitted to handle multi-level security data. *See* Abstract. This is another clear indication that *Covey* is simply not directed to establishing security levels to software objects. Therefore, it is abundantly clear that *Covey* does not disclose or make obvious any type of establishment of a security level to a software object. Instead, *Covey* discloses assigning sensitivity level tags to calculate certain sensitivity levels related to stored data. *See* col. 5, lines 15-19. *Covey* explicitly indicates that calculation is made for operation results based upon how software relates to data from different classification or security levels. *See* col. 6, lines 8-10. Therefore, the calculation of sensitivity levels in *Covey* only relates to data and not to software objects. Accordingly, the element of establishing a security level for software object of claim 1 is not made obvious by *Covey* and, further, *Couleur* does not make up for this deficit.

Further, the Examiner makes conflicting assertions that undermines Examiner’s arguments. First, the Examiner asserts that the multi-table input/output (I/O) space access is disclosed by *Covey*; and then, asserts that *Covey* is silent on the capability of showing the multi-table I/O space. *See* pages 2-3 of the Office Action dated 11/14/2007. Clearly, *Covey* does not disclose any type of a multi-table I/O space access. *Covey* discloses page tables that include

page descriptors and labels, which are used to address the memory 70. However, the Examiner is, indeed, correct in indicating that *Covey* is clearly silent on the multi-table I/O space. Moreover, *Couleur* does not make up for this deficit. The conflicting arguments provided by the Examiner clearly do not support an argument that *Covey* and *Couleur* allegedly disclose or make obvious all of the elements of claim 1 of the present invention.

The Examiner asserts that *Couleur* teaches a multi-table I/O space; however, this is clearly not the case. *Couleur* is directed to converting virtual addresses to absolute addresses using page tables. See Abstract of *Couleur*; col. 2, lines 20-29. However, *Couleur* is explicit in indicating that each peripheral that is connected to an I/O unit relates to a particular page table. In other words, even though several page tables are disclosed, multi-table memory access is not disclosed or made obvious since each peripheral is associated with only one page table. There is clearly no disclosure of a multi-table I/O space. See Abstract; col. 2, lines 20-29. *Couleur* clearly indicates that each peripheral device connected to the I/O unit is associated with a page table in memory. See col. 2, lines 20-23. Those skilled in the art would not find obvious a multi-table I/O space based upon this disclosure. Further, even if *arguendo*, *Couleur* were to be combined with *Covey* in the manner alleged by the Examiner, as described above, another element, which relates to establishing a security level for the software object, is clearly not disclosed or made obvious by *Covey*, *Couleur*, or their combination.

Applicants respectfully assert that *Covey*, *Couleur*, and/or their combination do not teach or disclose all of the elements of claim 1-3, 12-14 and 16 of the present invention. In order to establish a *prima facie* case of obviousness, the Examiner must consider the following factors: 1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to

combine the teachings; 2) there must be a reasonable expectation of success; and 3) the prior art reference(s) must teach or suggest all the claim limitations. MPEP § 2143 (2005) (citing *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991)). In making an obviousness rejection, it is necessary for the Examiner to identify the reason why a person of ordinary skill in the art would have combined the prior art references in the manner set forth in the claims. *KSR Int'l Co. v. Teleflex, Inc.*, at 14, No. 04-1350 (U.S. 2007). Applicants respectfully submit that the Examiner has not met this burden. If fact, as illustrated below, *Covey* and *Couleur* would not be combined in the manner set forth in the claims. Further, the Examiner has failed into identify why those skilled in the art would combine *Covey* and *Couleur*. Further, even if *Covey* and *Couleur* were combined, all elements of claims 1-3, 12-14 and 16 would not be taught or made obvious by this combination. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established in rejecting claims 1-3, 12-14 and 16.

Those skilled in the art simply would not be motivated to combine *Couleur* with *Covey*. The Examiner has failed to identify any particular reason to provide such a combination to make obvious any of the claims of the present invention. *Couleur* is subject matter that relates to memory access, specifically page memory. In contrast, *Covey* is directed to execution of untrusted software but only discloses security levels relating to data and not to the software object. In fact, as described above, *Covey* explicitly states that software need not be examined before handing secure data. Those skilled in the art simply would not find any reason to combine these to cited prior art references to make obvious any of the claims of the present invention. The Examiner has failed to provide or identify any such reasons. *Couleur* is from a different generation of computer technology as compared to *Covey* and relates to entirely different processes. Without using proper hindsight reasoning, those skilled in the art simply

would not combine them in the manner claimed. Further, as described above, the combination of *Covey* and *Couleur* still would not disclose, teach, or make obvious all of the elements of claim 1 of the present invention. Applicants have pointed to several factors why those skilled in the art simply would not combine *Covey* and *Couleur* in the manner claimed by claim 1 of the present invention. Accordingly, claim 1 of the present invention is allowable for at least the reasons cited herein.

Claim 12 calls for an apparatus that comprises means for performing a multi-table I/O space access using at least one of a security level that may be established for said software object being executed. Therefore, as described above, *Covey* and *Couleur* do not disclose or make obvious means for performing a multi-table (I/O) space access. Accordingly, claim 12 of the present invention is allowable.

Claim 13 calls for an (I/O) access interface that is coupled to a bus and a memory unit wherein the memory access interface is capable of providing a processor of a multi-level table I/O space access to access a portion of the memory unit. As described above, *Covey* and *Couleur* do not disclose or make obvious the multi-level table I/O space access. Accordingly, all of the elements of claim 13 of the present invention are not taught, disclosed, or made obvious by *Covey* and *Couleur*. Therefore, claim 13 of the present invention is allowable. Further, claim 17 calls for a computer programmable device encoded with instructions which, when executed by a computer, performs a method that includes performing a multi-table I/O space access, which for at least the reasons cited above, is not taught, disclosed, or made obvious by *Covey* and *Couleur*. Therefore, claim 17 of the present invention is allowable.

Independent claims 1, 12, and 13 are allowable for at least the reasons cited above. Additionally, dependent claims 2-7, 9-11, 14-16, and 18-20, which respectively depend from claims 1, 8, 12, 13, and 17, are also allowable for at least the reasons cited above.

Further, Applicants acknowledge and appreciate that the Examiner has allowed claims 8-11 and 17-20. Further, Applicants appreciate that claims 4, 15, 5-7 contain allowable subject matter, as indicated by the Examiner. Additionally, in light of the arguments provided herein, all pending claims of the present invention are allowed.

Reconsideration of the present application is respectfully requested.

In light of the arguments presented above, Applicants respectfully assert that claims 1-20 are allowable. In light of the arguments presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, **the Examiner is requested to call the undersigned attorney at the Houston, Texas telephone number (713) 934-4069** to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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